

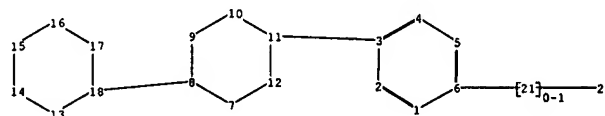
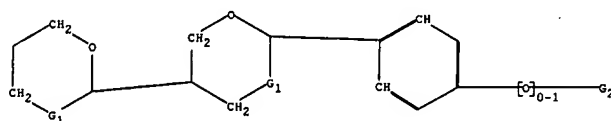
## WEST Search History

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DATE: Wednesday, September 12, 2007

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		<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=NO; OP=ADJ</i>	
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<input type="checkbox"/>	L3	liquid crystal\$	548322
<input type="checkbox"/>	L2	549/370 or 549/415	380
<input type="checkbox"/>	L1	20050017216	2

END OF SEARCH HISTORY



chain nodes :

21 22

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

chain bonds :

3-11 6-21 8-18 21-22

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18

exact/norm bonds :

3-11 6-21 7-8 7-12 8-9 8-18 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 21-22

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6

G1:C,O

G2:Cl,F,S,CF2,CF3,CN

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 21:CLASS 22:CLASS

L4 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2006:1252979 CAPLUS  
 DN 146:36424  
 TI Method for producing tetrahydropyranes from tetrahydropyran-3-ones  
 IN Taugerbeck, Andreas; Lietzau, Lars  
 PA Merck Patent G.m.b.H., Germany  
 SO PCT Int. Appl., 41pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2006125550	A1	20061130	WO 2006-EP4607	20060516
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRAI EP 2005-11320 A 20050525  
 RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2006:1252358 CAPLUS  
 DN 146:36422  
 TI Tetrahydropyran derivatives comprising several rings containing oxygen  
 and method for the production thereof  
 IN Poetsch, Eike; Lietzau, Lars; Meyer, Volker; Binder, Werner; Jaehrling,  
 Kai; Klasen-Memmer, Melanie; Manabe, Atsutaka; Wittek, Michael  
 PA Merck Patent G.m.b.H., Germany  
 SO PCT Int. Appl., 72pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2006125530	A1	20061130	WO 2006-EP4425	20060511
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRAI EP 2005-11322 A 20050525  
 OS MARPAT 146:36422  
 RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:1251777 CAPLUS  
 DN 146:36022  
 TI Pyran/dioxan derivatives and use thereof in liquid crystal media  
 IN Lietzau, Lars; Czanta, Markus  
 PA Merck Patent G.m.b.H., Germany  
 SO PCT Int. Appl., 73pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2006125511	A1	20061130	WO 2006-EP4140	20060503
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
PRAI	EP 2005-11324	A	20050525		
	EP 2005-17654	A	20050812		

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2006:1250978 CAPLUS  
 DN 146:36420  
 TI Formyltetrahydropyrans, method for the production thereof, and use thereof in the production of liquid crystal compounds  
 IN Poetsch, Eike; Meyer, Volker; Binder, Werner; Lietzau, Lars; Jaehrling, Kai; Burek, Kasimir  
 PA Merck Patent G.m.b.H., Germany  
 SO PCT Int. Appl., 72pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2006125529	A1	20061130	WO 2006-EP4424	20060511
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
PRAI	EP 2005-11321	A	20050525		
OS	MARPAT 146:36420				

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:1249234 CAPLUS  
 DN 146:36018  
 TI Liquid crystalline medium showing improved high dielectric anisotropy, nematic phase range, and birefringence and liquid crystal display  
 IN Czanta, Markus; Manabe, Atsutaka; Lietzau, Lars; Wittek, Michael  
 PA Merck Patent GmbH, Germany  
 SO Eur. Pat. Appl., 66pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1726633	A1	20061129	EP 2006-10227	20060518
	R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, YU				
	KR 2006121690	A	20061129	KR 2006-45599	20060522
	US 2006278850	A1	20061214	US 2006-439532	20060524
	CN 1869792	A	20061129	CN 2006-10084515	20060525
	JP 2006328399	A	20061207	JP 2006-144861	20060525
PRAI	EP 2005-11326	A	20050525		
	EP 2005-22352	A	20051013		
OS	MARPAT 146:36018				
RE.CNT 4	THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT				

L4 ANSWER 6 OF 12 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2004:1059445 CAPLUS  
 DN 142:46068  
 TI Liquid crystalline compounds for liquid crystal mixture suitable for liquid crystal display  
 IN Kirsch, Peer; Poetsch, Eike; Hahn, Alexander; Binder, Werner; Meyer, Volker; Heckmeier, Michael; Luessem, Georg; Klasen-Memmer, Melanie  
 PA Merck Patent G.m.b.H., Germany  
 SO PCT Int. Appl., 75 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004106459	A1	20041209	WO 2004-EP5538	20040524
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	DE 102004025808	A1	20041216	DE 2004-102004025808	20040524
	JP 2007506798	T	20070322	JP 2006-529902	20040524
	US 2007034828	A1	20070215	US 2005-558205	20051125
PRAI	DE 2003-10324345	A	20030527		
	WO 2004-EP5538	W	20040524		
OS	MARPAT 142:46068				
RE.CNT 5	THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT				

L4 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:1035069 CAPLUS  
 DN 142:30325  
 TI Pyran derivatives for use in liquid crystal media  
 IN Poetsch, Eike; Binder, Werner; Meyer, Volker; Heckmeier, Michael; Luessem, Georg  
 PA Merck Patent GmbH, Germany  
 SO Eur. Pat. Appl., 110 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1482019	A1	20041201	EP 2004-10357	20040430
	EP 1482019	B1	20060927		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
	DE 102004021338	A1	20050303	DE 2004-102004021338	20040430
	AT 340836	T	20061015	AT 2004-10357	20040430
	JP 2004352721	A	20041216	JP 2004-157022	20040527
	US 2005017216	A1	20050127	US 2004-854718	20040527
PRAI	DE 2003-10324312	A	20030527		
OS	MARPAT 142:30325				

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2001:449725 CAPLUS  
 DN 135:53593  
 TI Pentafluorosulfuranyloxybenzene derivative for liquid crystalline medium suitable for liquid crystal display  
 IN Kirsch, Peer; Krause, Joachim; Heckmeier, Michael  
 PA Merck Patent G.m.b.H., Germany  
 SO Ger. Offen., 24 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10058472	A1	20010621	DE 2000-10058472	20001124
PRAI	DE 1999-19961303	A1	19991218		
OS	MARPAT 135:53593				

L4 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 1999:561778 CAPLUS  
 DN 131:177465  
 TI Perfluoroalkyl-tetrafluorosulfanyl derivative and liquid crystalline medium containing the same  
 IN Kirsch, Peer; Tarumi, Kazuaki; Krause, Joachim  
 PA Merck Patent G.m.b.H., Germany  
 SO Ger. Offen., 40 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19807372	A1	19990826	DE 1998-19807372	19980221
PRAI	DE 1998-19807372		19980221		
OS	MARPAT 131:177465				

L4 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 1999:308641 CAPLUS

DN 130:330632  
TI Sulfur pentafluoride derivative and liquid crystal medium  
IN Kirsch, Peer; Tarumi, Kazuaki; Krause, Joachim  
PA Merck Patent G.m.b.H., Germany  
SO Ger. Offen., 40 pp.  
CODEN: GWXXBX  
DT Patent  
LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19748109	A1	19990506	DE 1997-19748109	19971031
	DE 19748109	B4	20060907		
PRAI	DE 1997-19748109		19971031		
OS	MARPAT 130:330632				

L4 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 1997:127433 CAPLUS  
DN 126:150650  
TI Preparation of dioxanyl-dioxane liquid crystal for liquid crystal display  
IN Poetsch, Eike; Binder, Werner; Krause, Joachim; Tarumi, Kazuaki  
PA Merck Patent GmbH, Germany  
SO Ger. Offen., 25 pp.  
CODEN: GWXXBX  
DT Patent  
LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19525314	A1	19970116	DE 1995-19525314	19950712
PRAI	DE 1995-19525314		19950712		
OS	CASREACT 126:150650; MARPAT 126:150650				

L4 ANSWER 12 OF 12 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 1996:705482 CAPLUS  
DN 125:343068  
TI Di-1,3-dioxane derivatives useful as liquid crystals for electro-optical liquid crystal displays  
IN Buchecker, Richard; Marck, Guy; Villiger, Alois  
PA F. Hoffmann-La Roche Ag, Switz.  
SO Eur. Pat. Appl., 26 pp.  
CODEN: EPXXDW

DT Patent  
LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 732330	A1	19960918	EP 1996-103434	19960306
	EP 732330	B1	20010912		
	R: CH, DE, FR, GB, IT, LI, NL				
	US 5667721	A	19970916	US 1996-604630	19960221
	JP 08253469	A	19961001	JP 1996-47026	19960305
	HK 1011360	A1	20011214	HK 1998-112322	19981126
PRAI	CH 1995-754	A	19950316		
OS	MARPAT 125:343068				